

Application No. 10/775,429

REMARKS

Claims 1-14 and 21-27 are pending. By this Amendment, claims 1, 8, 21 and 25 are amended. The amendments to claims 1, 8, 21 and 25 are supported by the specification at, for example, pages 21 and 22. No new matter is introduced by the present Amendment.

In the Office Action, the Examiner objected to the specification asserting that "it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent." In the previous response, Applicants submitted, and continue to maintain, that one of ordinary skill in the art would recognize that the substituted group would be inserted in the methylene chain in such a way as to provide the appropriate number of bonds to each group. In response, the Examiner asserted that "Applicants' assertion is merely attorney argument that is not supported by any objective evidence on the present record. The instant specification merely discloses that one of the methylene groups in the group $-(CH_2)_nH$ can be replaced by N, C, B, Si, P or a 'CR₅'." However, Applicants note that the specification expressly teaches that "one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O....." (Emphasis added). See specification at, for example, page 3, lines 5-15.

Since the specification clearly indicates that one or more methylene groups can be replaced, one of ordinary skill in the art would recognize that the substituted groups would be inserted into the methylene chain so as to provide the appropriate number of bonds to each group. Furthermore, no objective evidence is needed on this point, since clearly one of ordinary skill in the organic synthesis art would recognize that a substituted group would have to be inserted in a way to provide the appropriate number of bonds to the group. Additionally, Applicants note that "[t]he specification need not disclose what is well known to those skilled in the art...." See MPEP § 2164.05(a).

Thus, since one of ordinary skill in the art would be able to understand how a divalent methylene group could be substituted with an appropriate combination of disclosed atoms and

Application No. 10/775,429

groups, the specification is clear and Applicants respectfully request the withdrawal of the objection to the specification. However, Applicants have amended the claim to remove some inadvertent redundancy in the notation.

The Examiner also objected to the specification asserting that when the R group of, for example, an NR_n group is a bond, "it is not clear to what the R groups in the groups are bonded." Applicants submit that generally the term "a bond" is clear, and that one of ordinary skill in the art would recognize that when an R group is a bond, the bond is between adjacent groups in the methylene chain. However, in order to advance prosecution, Applicants have removed the bond language from the description of the R groups in the specification. As such, the Examiner's objection to the specification is presently moot.

The Examiner also objected to the specification asserting that "it is not clear what is meant by the term 'part of a ring group.'" Applicants' continue to maintain that one of ordinary skill in the art would generally understand that "part of a ring group" is an atom or group that is bonded to other atoms or groups in a ring system. However, in order to advance prosecution, Applicants have removed the "part of a ring group" from pages 3, 8 and 21, and respectfully request the withdrawal of the objection to the specification.

Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner rejected claims 1-14 and 21-27 under 35 U.S.C. § 112, second paragraph, as being indefinite. More specifically, the Examiner asserted "it is not clear what is meant by the term 'part of a ring group.'" As discussed above, Applicants maintain that the one of ordinary skill in the art would generally understand that "part of a ring group" is an atom or group that is bonded to other atoms or groups in a ring system, and as such the term "part of a ring group" is

Application No. 10/775,429

definite. However, in order to advance prosecution, Applicants have removed the "part of a ring group" language from the claims and submit that the Examiner's rejection of the claims is presently moot.

The Examiner also rejected the claims 1, 8, 21 and 25 as being indefinite asserting that "it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent." As an initial matter, Applicants note that the claims recite that the methylene groups can be replaced by, for example, a CR_cR_d group or a SiR_eR_f , and thus reciting groups such as C and Si is redundant. Thus, Applicants have removed the redundant groups from the claims. As discussed above, Applicants continue to maintain that one of ordinary skill in the art would recognize that the substituted group would be inserted in the methylene chain in such a way as to provide the appropriate number of bonds to each group. More specifically, Applicants note that the specification expressly teaches that "one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O....." See specification at, for example, page 3, lines 5-15. Since the specification clearly indicates that one or more methylene groups can be replaced, one of ordinary skill in the art would recognize that the substituted groups would be inserted into the methylene chain so as to provide the appropriate number of bonds to each group. Thus, since the scope of the claims 1, 8 and 21 are clear, claims 1, 8 and 21 are definite.

The Examiner also asserted that claims 1, 8, 21 and 25 are indefinite "because it is not clear to what R groups are bonded" when the R groups are "a bond." As discussed above, Applicants submit that generally the term "a bond" is clear, and that one of ordinary skill in the art would recognize that when an R group is a bond, the bond is between adjacent groups in the methylene chain. However, in order to advance prosecution, Applicants have removed the bond language from the claims, and submit that the Examiner's rejection of claims 1, 8 and 21 is presently moot.

Application No. 10/775,429

Since the claims 1-14 and 21-27 are definite, Applicants respectfully request the withdrawal of the rejection of claims 1-14 and 21-27 under 35 U.S.C. § 112, second paragraph, as being indefinite.

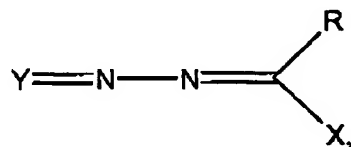
Rejections Under 35 U.S.C. § 103

1. Rejections Over Goto

The Examiner rejected claims 1, 2, 21, 22, 25 and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,415,640 to Goto (the '640 patent). More specifically, the Examiner asserted that "the substituent group N-(CH₃)₂ on one of the phenyl groups of the 9-fluorenylidene group in the Goto compound (11) does not meet the substituent limitations recited in instant claims 1, 21, and 26." The Examiner further asserted that "Goto discloses that compound (11) represents formula (I) disclosed at col. 3, lines 20-47. Goto teaches that both benzene rings in the 9-fluorenylidene group are substituted with the groups X and Y, respectively, where the X and Y groups can be a substituted amino, a halogen, an alkyl group having preferably from 1 to 8 carbon atoms, an amino group, or an alkoxy group having preferably 1 to 8 carbon atoms." The Examiner then concluded that "[i]t would have been obvious for a person having ordinary skill in the art, in the view of the teachings of Goto, to replace the dimethylamino substituent group on the benzene ring in the 9-fluorenylidene group in the Goto compound (11) with an alkyl having 1 to 8 carbon atoms or an alkoxy having 1 to 8 carbon atoms...." Applicants have amended their independent claims to more particularly point out their claimed invention. Applicants submit that the '640 patent does not render Applicants' invention, as presently claimed in independent claims 1, and 21, prima facie obvious.

Application No. 10/775,429

Compound (11) of the '640 patent comprises a N,N-diethylamine-4-naphthylenc group at one end of the compound. Additionally, Formula (I) discloses that R₁ "is a substituted or unsubstituted aryl group, preferably substituted or unsubstituted phenyl or naphthly...." As such, the '640 patent does not teach or suggest a compound where the R₁ is selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. In contrast, Applicants' invention, as presently claimed in independent claims 1 and 21, relates to a charge transport material having the formula



where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group and X comprises an arylamine group selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. Since the '640 patent does not teach or suggest the claimed charge transport materials, Applicants respectfully request the withdrawal of the rejection of claims 1, 2, 21, 22, 25 and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. the '640 patent.

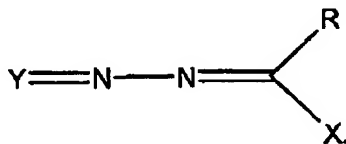
2. Rejections Over Ohkubo Combined With Goto

The Examiner rejected claims 7-9 and 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,430,526 to Ohkubo (the '526 patent) combined with the '640 patent (Goto). More specifically, the Examiner asserted that the '526 patent "discloses an electrophotographic image forming apparatus comprising all the components recited in the instant claims 8, 9, and 14, but for the particular photoreceptor." Additionally, the Examiner noted that the '526 patent

Application No. 10/775,429

“does not disclose the use of the photoreceptor recited in the instant claims.” Applicants submit that the combination of the ‘526 patent and the ‘640 patent does not render Applicants’ invention, as presently claimed in independent claims 1 and 8, prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

As discussed above, Compound (11) of the ‘640 patent comprises a N,N-diethylamine-4-naphthylene group at one end of the compound. Additionally, Formula (I) discloses that R₁ “is a substituted or unsubstituted aryl group, preferably substituted or unsubstituted phenyl or naphthyl....” As such, the ‘640 patent does not teach or suggest a compound where the R₁ is selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. In contrast, Applicants’ invention, as presently claimed in independent claims 1 and 8, relates to a charge transport material having the formula



where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group and X comprises an arylamine group selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. Thus, the ‘640 patent does not disclose or suggest all of the features of Applicants’ invention, as presently claimed in independent claims 1 and 8. Additionally, since the ‘526 patent alone or in combination with the ‘640 patent does not disclose or suggest the use of the claimed charge transport materials, the ‘526 patent does not make up for the deficiencies of the ‘640 patent. Since the combination of the ‘526 patent and the ‘640 patent does not disclose or suggest all of the features of Applicants’

Application No. 10/775,429

claimed invention, the combination of the '526 patent and the '640 patent does not render Applicants' invention, as claimed in independent claims 1 and 8, prima facie obvious.

Since the combination of the '526 patent and the '640 patent does not render Applicants' claimed invention prima facie obvious, Applicants respectfully request the withdrawal of the rejection of claims 7-9 and 14 as being unpatentable over the '526 patent combined with the '640 patent.

3. Rejections Over Goto Combined With Additional Teachings of Goto

The Examiner rejected claims 4 and 24 under 35 U.S.C. § 103(a) as being unpatentable over the '640 patent. Claims 4 and 24 depend from claims 1 and 21, respectively, and therefore incorporate all of the features of the respective independent claims. As discussed above, the '640 patent does not disclose or suggest all of the features of Applicants' invention, as presently claimed in independent claims 1 and 21, and therefore does not render claims 1 and 21 prima facie obvious. As such, Applicants respectfully request the withdrawal of the rejection of claims 4 and 24 as being unpatentable over the '640 patent.

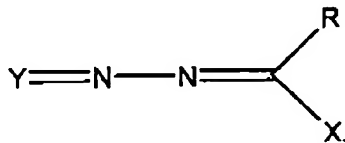
Additionally, the Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over the '526 patent combined with the '640 patent. Claim 11 depends from independent claim 8 and therefore incorporates all of the features of claim 8. As discussed above, the combination of the '526 patent and the '640 patent does not render Applicants' invention, as claimed in independent claim 8, prima facie obvious. As such, Applicants respectfully request the withdrawal of the rejection of claim 11 as being unpatentable over the '526 patent combined with the '640 patent.

Application No. 10/775,429

4. Rejections Over Hamasaki Combined with Goto

The Examiner rejected claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,528,645 to Hamasaki (the '645 patent) combined with the '640 patent (Goto). More specifically, the Examiner asserted that the '645 patent "discloses a single-layered organic photoreceptor comprising an electrically conductive substrate and a photosensitive layer comprising a particular titanyl phthalocyanine crystals, an electron transferring compound, and a hole transferring compound." The Examiner also noted that the '645 patent "does not exemplify a single-layered organic photoreceptor comprising the charge transport compound recited in the instant claims." Applicants submit that the combination of the '645 patent and the '640 patent does not render Applicants' invention, as presently claimed in independent claim 1, prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

As discussed above, Compound (11) of the '640 patent comprises a N,N-diethylamine-4-naphthylene group at one end of the compound. Additionally, Formula (I) discloses that R₁ "is a substituted or unsubstituted aryl group, preferably substituted or unsubstituted phenyl or naphthyl...." As such, the '640 patent does not teach or suggest a compound where the R₁ is selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. In contrast, Applicants' invention, as presently claimed in independent claim 1, relates to a charge transport material having the formula



Application No. 10/775,429

where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group and X comprises an arylamine group selected from the group consisting of a carbazole group, a julolidine group and a triphenyl amine group. Additionally, since the '645 patent alone or in combination with the '640 patent does not teach or suggest the claimed charge transport materials, the '645 patent does not make up for the deficiencies of the '640 patent. As such, the combination of the '645 patent and the '640 patent does not teach or suggest all of the features of Applicants' invention, as claimed in independent claim 1, and therefore does not render Applicants' claimed invention prima facie obvious.

Since the combination of the '645 patent and the '640 patent does not render Applicants' claimed invention, prima facie obvious, Applicants respectfully request the withdrawal of the rejection of claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent the '645 patent combined with the '640 patent.

5. Rejections Over Ohkubo Combined With Hamasaki and Goto

The Examiner rejected claims 7-9 and 12-14 under 35 U.S.C. § 103(a) as being unpatentable over the '526 patent (Ohkubo) combined with the '645 patent (Hamasaki) and the '640 patent (Goto). As discussed above, the '640 patent does not disclose or suggest Applicants' claimed charge transport material, as presently claimed in independent claims 1 and 8. Additionally, neither the '526 patent nor the '645 patent alone or in combination with the '640 patent disclose or suggest the claimed charge transport materials, and thus do not make up for the deficiencies of the '640 patent. Therefore, the '526 patent combined with the '645 patent and the '640 patent does not render Applicants' invention, as claimed in independent claims 1 and 8,

Application No. 10/775,429

prima facie obvious. As such, Applicants respectfully request the withdrawal of the rejection of claims 7-9 and 12-14 under 35 U.S.C. § 103(a) as being unpatentable over the '526 patent (Ohkubo) combined with the '645 patent (Hamasaki) and the '640 patent (Goto).

Applicants do not comment further on specific features of the dependent claims, but do not acquiesce to the assertions in the Office Action, since these issues are presently moot in light of the above analysis.

CONCLUSION

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



Brian L. Jarrells
Registration No. 53,067

Customer No. 24113
Patterson, Thuent, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 252-1535